CLAIMS

What is claimed is:

1. A power distribution system for electronic equipment, comprising:

a voltage bus;

a plurality of power supplies coupled in parallel to said voltage bus;

a plurality of diodes wherein each of said diodes is disposed between a power supply and said voltage bus to isolate said voltage bus from a low power supply voltage;

a plurality of sense lines, wherein each of said sense lines is coupled to one of said plurality of power supplies; and

a plurality of resistive elements, wherein each of said resistive elements is coupled to said voltage bus and to a respective sense line of said plurality of sense lines, wherein said plurality of resistive elements maintain, when a minimal load is applied to said voltage bus, said sense lines at a voltage sufficiently lower than a voltage of said voltage bus to cause said plurality of power supplies to prevent said plurality of diodes from being reversed-biased.

2. The power distribution system of claim 1, wherein each of said plurality of power supplies comprises a controller for increasing or decreasing a duty cycle in response to feedback associated with a respective sense line of said plurality of sense lines.

3. The power distribution system of claim 2 wherein each power supply of said plurality of power supplies comprises an error amplifier coupled between a respective sense line of said plurality of sense lines and said controller.

4. The power distribution system of claim 1 wherein said plurality of power supplies are brick converters.

5. The power distribution system of claim 1 further comprising:

a plurality of protective resistors each coupled between a respective output of one of said plurality of power supplies and a respective sense line of said plurality of sense lines.

6. The power distribution system of claim 5 wherein each of said plurality of resistors possesses a resistance that is one order of magnitude greater than resistance of said plurality of resistive elements.

7. A method comprising:

providing a plurality of power supplies to maintain a voltage on a voltage bus;

providing a plurality of blocking diodes with each blocking diode being disposed between a respective power supply of said plurality of power supplies and said voltage bus to isolate said voltage bus from a low output voltage;

coupling a plurality of sense lines to said plurality of power supplies to provide feedback to control said plurality of power supplies; and

coupling a plurality of resistors with each resistor being disposed between a respective sense line of said plurality of sense lines and said voltage bus, wherein said plurality of resistors maintain said sense lines at a sufficiently low voltage when a low load is applied to said voltage bus to prevent said plurality of blocking diodes from being reversed biased.

8. The method of claim 7 further comprising:

increasing a duty cycle of one of said plurality of power supplies when a voltage on a respective sense line falls below a reference voltage.

9. The method of claim 7 further comprising:

decreasing a duty cycle of one of said plurality of power supplies when a voltage on a respective sense line exceeds a reference voltage.

10. The method of claim 7 further comprising:

operating a respective differential amplifier for each of said power supplies with a first input coupled to a respective sense line and with a second input coupled to a reference voltage.

11. The method of claim 7 wherein said plurality of power supplies are brick converters.

12. The method of claim 7 further comprising:

providing a second plurality of resistors with each resistor of said second plurality of resistors being coupled between a respective power supply and a respective sense line.

13. The method of claim 12 wherein each resistor of said plurality of resistors possesses a resistance that is approximately $1/10^{th}$ of a resistance of said second plurality of resistors.

14. A power distribution system for electronic equipment, comprising:

a bus for supplying current to said electronic equipment;

a plurality of brick converters coupled in parallel to said bus with a respective blocking diode between each brick converter and said bus;

a plurality of sense lines providing feedback to respective brick converters; and

a plurality of resistive elements that are each coupled to said bus and to a respective sense line of said plurality of sense lines, wherein said plurality of resistive elements cause sufficient feedback to be provided to said brick converters, under low load conditions, to prevent output voltages of said plurality of brick converters from falling below a voltage of said bus.

15. The power distribution system of claim 14, wherein each of said plurality of brick converters increases or decreases a duty cycle in response to said feedback.

16. The power distribution system of claim 15 wherein each brick converter of said plurality of brick converters comprises a differential amplifier coupled to a respective sense line and a reference voltage.

17. The power distribution system of claim 16 wherein each brick converter of said plurality of brick converters comprises a controller for processing an error signal from a respective differential amplifier.

18. The power distribution system of claim 16 wherein said reference voltage defines a voltage rail for said electronic equipment.

19. The power distribution system of claim 14 further comprising:

a plurality of protective resistors each coupled between a respective output of one of said plurality of brick converters and a respective sense line.

20. The power distribution system of claim 19 wherein each of said plurality of resistors possesses a resistance that is one order of magnitude greater than resistance of said plurality of resistive elements.